

Appl. No. 09/964,303
Docket No. H1799-00075
Reply to Office Action of January 21, 2004

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. – 4. (Cancelled)

5. (Currently Amended) ~~The system of claim 4,~~ A system for cooling a canister, comprising:

a first heat pipe having an evaporator and a condenser, the first heat pipe being mounted with the evaporator inside the canister and the condenser outside the canister; wherein the canister is at least partially buried below ground, and the first heat pipe is positioned entirely below a ground surface;

a second heat pipe having an evaporator thermally coupled to the condenser of the first heat pipe, the second heat pipe having a condenser;

a third heat pipe having an evaporator thermally coupled to the condenser of the second heat pipe, the third heat pipe having a condenser; and
means for dissipating heat from the condenser of the third heat pipe.

6. (Currently Amended) The system of claim [4]5, wherein the second heat pipe is partially buried below the ground surface, and partly above the ground surface.

Appl. No. 09/964,303
Docket No. H1799-00075
Reply to Office Action of January 21, 2004

7. (Currently Amended) The system of claim [4]5, wherein the third heat pipe is completely above the ground surface.

8. (Currently Amended) The system of claim [4]5, wherein the second heat pipe is a thermosyphon.

9. (Currently Amended) The system of claim [4]5, wherein the evaporator of the third heat pipe is oriented substantially vertically, and the condenser of the third heat pipe is at a substantial angle away from vertical.

10. (Original) The system of claim 9, wherein the angle of the condenser of the third heat pipe is at least about 5 degrees from horizontal.

11. (Currently Amended) The system of claim [4]5, wherein the first heat pipe is mounted to a motor housing of a flywheel system within the canister.

12. (Original) The system of claim 11, wherein the first heat pipe is mounted within a block of metal having a hole therethrough to receive the heat pipe, the block being mounted to the flywheel system.

Appl. No. 09/964,303
Docket No. H1799-00075
Reply to Office Action of January 21, 2004

13. (Currently Amended) The system of claim [4]5, wherein the canister is a vacuum housing.

14. (Currently Amended) The system of claim [4]5, wherein the heat dissipating means including a plurality of circular fins arranged in a fin stack.

15. (Currently Amended) The system of claim [4]5, wherein at least one of the heat pipes has a wick in the evaporator thereof that does not extend into the condenser thereof.

16. (Currently Amended) The system of claim [4]5, wherein at least one of the heat pipes has a wick formed of sintered metal.

17. (Original) An energy storage system, comprising:
a canister;
an energy storage flywheel having a motor housing mounted inside the canister;
a first heat pipe having an evaporator and a condenser, the evaporator of the first heat pipe being mounted to the motor housing, the condenser of the first heat pipe outside the canister;
a second heat pipe having an evaporator conductively coupled to the condenser of the first heat pipe, the second heat pipe having a condenser;

Appl. No. 09/964,303
Docket No. H1799-00075
Reply to Office Action of January 21, 2004

a third heat pipe having an evaporator conductively coupled to the condenser of the second heat pipe, the third heat pipe having a condenser interfacing to a heat dissipating means.

18. (Original) The system of claim 17, wherein the second heat pipe is a thermosyphon.

19. (Original) The system of claim 17, wherein the evaporator of the third heat pipe is oriented substantially vertically, and the condenser of the third heat pipe is at a substantial angle away from vertical.

20. (Original) The system of claim 19, wherein the angle of the condenser of the third heat pipe is at least about 5 degrees from horizontal.

21. (Original) The system of claim 17, wherein the canister is a vacuum housing.

22. (Original) The system of claim 17, wherein the heat dissipating means include circular fins arranged in a fin stack.

Appl. No. 09/964,303
Docket No. H1799-00075
Reply to Office Action of January 21, 2004

23. (Original) The system of claim 17, wherein at least one of the heat pipes has a wick in the evaporator thereof that does not extend into the condenser thereof.

24. (Original) The system of claim 17, wherein at least one of the heat pipes has a wick formed of sintered metal.